



## **INVITATION TO BID**

**Cooling Tower Replacement  
For  
Jacob T. Stewart**

**Bid Opening: April 13, 2010  
Grambling State University  
Purchasing Department  
403 Main Street  
Old President's Residence  
Grambling, LA 71245**

## ADVERTISEMENT FOR BIDS

Sealed bids will be accepted in the office of the Purchasing Director in the Purchasing Department, located at 403 Main Street, Grambling, Louisiana until 2 P.M. CT April 13, 2010 at which time they will be publicly opened and read aloud.

Bid # 50018100024 –Cooling Tower Replacement for Jacob T. Stewart

**A MANDATORY Pre-Bid Conference will be held on March 30, 2010 at 2:00 p.m. in the Purchasing Department Conference Room.**

Bids must be returned to the Purchasing Office in sealed envelopes. Bids must be submitted on the form enclosed herewith, and in strict conformity with the intent of same without modifications. Bids must be signed in ink, dated, and title of person signing bid must be shown on bid.

Complete bidding documents may be obtained from the Director of Purchasing, Grambling State University, Grambling, Louisiana, 71245, via fax request at 318/ 274-3278 or [hamptonc@gram.edu](mailto:hamptonc@gram.edu). Bidding documents will be available on or about March 11, 2010 on State of Louisiana LaPac site [www.doa.state.la.us/osp/osp.htm](http://www.doa.state.la.us/osp/osp.htm), Use bid #50018100024.

Bids of \$50,000.00 or more will be considered only when the bidder certifies that he holds a current valid Louisiana Contractors license of proper classification and shows the license number on the sealed bid envelope and above his signature on the bid forms as required under R.S. 37:2150-2163. Contractors desiring to bid shall submit evidence that they have a current Louisiana Contractors license of proper classification. All bids must be accompanied by bid security equal to five percent (5%) of the base bid and any additive alternates and must be in the form of a certified check, cashier's check or bid bond written by a company licensed to do business in Louisiana.

The successful bidder will be required to furnish a performance and payment bond written by a company licensed to do business in Louisiana in an amount equal to 100% of the contract amount.

No bid may be withdrawn for a period of thirty (30) days after receipt of bids.

The Owner reserves the right to reject any and all bids and to waive any informalities incidental thereto.

Grambling State University adheres to the equal opportunity provisions of federal civil rights laws and regulations.

## **INSTRUCTIONS TO BIDDERS**

### **ARTICLE 1**

#### **DEFINITIONS**

- 1.1 The Bidding Documents include the following:
1. Advertisement for Bids.
  2. Instructions to Bidders.
  3. Bid Form
  4. Contract between Owner and Contractor.
  5. Performance and Payment Bond.
  6. Affidavit of Compliance with Act 38, 1965 Louisiana State Legislature.
  7. General Conditions of the Contract for Cooling Tower Replacement for Jacob T. Stewart
  8. Supplementary (and amended General) Conditions.
  9. Divisions of the Technical Specifications.
  10. Addenda issued during bid period. (by Owner and acknowledged in bid form)
- 1.2 Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Contract is executed.

### **ARTICLE 2**

#### **BIDDER'S REPRESENTATION**

- 2.1 Each bidder by submitting a bid represents that s/he has read and understands the bidding documents.
- 2.2 Each bidder by making a bid represents that s/he has visited the site and familiarized themselves with the local conditions under which the work is to be performed.
- 2.3 Each bidder by submitting a bid understands they must be fully qualified under any state or local licensing law for Contractors in effect at the time and at the location of the project before submitting a bid. In the State of Louisiana; only the bids of contractors and sub-contractors duly licensed under Louisiana Revised Statute 37:2150, et. seq., will be considered, if applicable. The Contractor shall be responsible for ensuring all Sub-contractors or prospective Sub-contractors are duly licensed in accordance with the statute above.
- 2.4 Each bidder submitting a bid understands that GSU's Public Works Policy related to contractor licensure is that a contractor's license is required for any/all projects with an anticipated/bid cost greater than \$50,000

## ARTICLE 3

### BIDDING PROCEDURES

- 3.1 Bids must be prepared on the forms provided by the Owner and submitted in accordance with the Instructions to Bidders.
- 3.2 A bid will be considered invalid if not deposited at the designated location prior to the time and date for receipt of bids indicated in the advertisement or invitation to bid, or prior to any extension thereof issued to the bidders.
- 3.3 Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his bid or any part thereof for thirty days after the receipt of bids. However, written request (letter or telegram) for the withdrawal of a bid or any part thereof will be granted if the request is received prior to the specified time of opening. Formal bids, amendments thereto or request for withdrawal of bids or any part thereof received after time specified for bid opening will not be considered whether delayed in the mail or for any other cause whatsoever.
- 3.4 Bids are to be sealed and will be received until the time specified and at the place specified in the advertisement for bids. It shall be the specific responsibility of the Bidders to deliver sealed bids to Grambling State University at the appointed place and prior to the announced time for the opening of bids. Late delivery of a bid for any reason including late delivery by the United States Mail shall disqualify the bid.
- 3.5 Prior to the receipt of bids, Addenda, if any, will be mailed or delivered (hard copy or email) to each person or firm recorded by the Owner as having received the bidding documents and will be available for inspection wherever the bidding documents are kept available for that purpose. Addenda issued after receipt of bids will be mailed or delivered only to the sealed bidder.
- 3.6 **Bids for Public Works will not be considered or accepted unless the bid is accompanied by bid security in an amount of not less than five percent (5%) of the sum of the Base Bid and any Alternates.** The bid security shall be in the form of a certified check drawn on a bank insured by the Federal Deposit Insurance Corporation, or a bid bond written by a surety company licensed to do business in Louisiana, accompanied by appropriate power of attorney and in favor of Grambling State University.
- 3.7 All Bids and Sureties must be signed by a duly authorized person of the firm or corporation and be accompanied by legal evidence authorizing the signature as valid.
- 3.8 Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and bidders shall not rely upon such interpretations, corrections and changes.
- 3.9 If bidding other than as specified, an indication must be made on the bid form, stating manufacturer's name and model number(s) being submitted for bid. Detailed specifications, drawings, pictures, brochures, diagrams or any other literature or information necessary to determine the equality of the bid response must be included with the bid form.
- 3.10 Prior to the issuance of a purchase order the successful bidder must submit the following items to the Purchasing Department:
  - a. Notarized affidavit
  - b. Contract
  - c. Insurance Certificate
  - d. Proof of filing of Performance and Payment Bond with Power of Attorney, if Public Works, and,
  - e. Resolution, if incorporated.

## ARTICLE 4

### EXAMINATION OF BIDDING DOCUMENTS

- 4.1 Each bidder shall examine the bidding documents carefully and, not later than seven days prior to the date for receipt of bids, shall make written request to the Owner for interpretation or correction of any ambiguity, inconsistency or error therein which he may discover. Any interpretation or correction will be issued as an Addendum by the Owner. Only a written interpretation or correction by Addendum shall be binding. No bidder shall rely upon any interpretation or correction given by any other method.

## ARTICLE 5

### SUBSTITUTIONS

- 5.1 Each bidder represents that his bid is based upon the materials and equipment described in the bidding documents.

### MANUFACTURER'S NUMBERS OR TRADE NAMES:

- 5.2 Where a manufacturer's product is named or specified, it is understood that "or equal" shall apply, whether stated or not. Such name and number is meant to establish the standard of quality desired and does not restrict bidders to the specific brand, make, manufacturer, or specification named; and are set forth and convey to prospective bidders the general style, type, character, and quality of product desired; and that equal products will be acceptable. Grambling State University shall be sole judge as to whether or not the material is equal to that specified.

## ARTICLE 6

### REJECTION OF BIDS

- 6.1 The bidder acknowledges the right of the Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the Owner to reject a bid if the bidder failed to furnish any required bid security, or to submit the data required by the bidding documents, or if the bid is in any way incomplete or irregular.

## ARTICLE 7

### AWARDS

- 7.1 Awards may not be made to any person, firm, or company in default of any contract. Said person, firm, or company shall be considered non-responsible bidders and may be reinstated and awards made to them only after they have given evidence of good faith and have satisfactorily completed their obligations.

### PUBLICIZING AWARDS

- 7.2 Written notice of award shall be sent to the successful bidder. In procurement over \$25,000, each unsuccessful bidder shall be notified of the award provided that he/she submitted with his/her bid a self-addressed envelope requesting this information. Notice of award will be made a part of the procurement file.

### RIGHT TO PROTEST

- 7.3 Any person who is aggrieved in connection with the solicitation or award of a contract shall protest to the Director Purchasing. Protests with respect to a solicitation shall be submitted in writing at least two days prior to the opening of bids on all matters except housing of state agencies, their personnel, operations, equipment, or activities pursuant to R.S. 39:1643 for which such protest shall be submitted at least ten days prior to the opening of bids. Protests with respect to the award of a contract shall be submitted in writing within fourteen days after contract award.

## AUTHORITY TO RESOLVE PROTESTS:

- 7.4 Prior to the commencement of an action in court concerning any controversy, the Director of Purchasing or his designee shall have the authority, to resolve the protest of any aggrieved person concerning the solicitation or award of a contract. This authority shall be exercised in accordance with regulations.

## ARTICLE 8

### PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

- 8.1 Performance and Payment Bonds shall be required on Public Works projects with an expected cost greater than \$50,000. Performance and Payment Bonds, when required, shall be provided in an amount of 100% of the contract price. Performance and Payments Bonds shall be required by the successful bidder. Any surety bond required shall be written by a surety or insurance company currently on the U. S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register. For any Public Works projects, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U. S. Department of the Treasury Financial Management Service list. The surety bond written for a Public Works project shall be written by a surety or insurance company that is currently licensed to do business in the State of Louisiana.
- 8.2 The bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power.

### RECORDING OF BOND AND CONTRACT

- 8.3 The Contractor shall record the Contract and Performance Bond with the Clerk of Court in Lincoln Parish and provide the Purchasing Department with proof of filing.

## ARTICLE 9

### PAYMENT

- 9.1 Payment will be made by Grambling State University.
- 9.2 The contractor will be required to provide a Clear Lien Certificate from the Lincoln Parish Clerk of Court, a process that may take an average 45 days for final payment.

## ARTICLE 10

### TAXES

- 10.1 Applicable taxes are to be included in lump sum bid.

## ARTICLE 11

### GUARANTEE

- 11.1 The materials and labor under this contract, as described in the specifications, shall be guaranteed by the Contractor for a period of one year from date of its acceptance against defects of materials or workmanship. Any defects which develop during this period shall be properly repaired or replaced without cost to the Owner as soon as possible.

### ACCEPTANCE

- 11.2 The guarantee covering materials and labor under this contract will begin the date a Notice of Acceptance is issued to the Contractor by Grambling State University.

## ARTICLE 12

### CHANGES IN THE WORK

- 12.1 A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a Change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any Change Order not signed by the Owner will be considered null and void.
- 12.2 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents.
- 12.3 Any change order in excess of the contract limit as defined herein shall be let out for public bid. The term contract limit as used herein shall be equal to the sum of \$30,000 per project. When the Change Order is negotiated it shall be fully documented and itemized as to cost, including material quantities, material costs, insurance, employee benefits, other related costs, profit and overhead. Where certain unit prices are contained in the initial contract no deviation shall be allowed in computing negotiated change order cost.

## SUPPLEMENTARY CONDITIONS

### ARTICLE 1

#### CONTRACTOR

##### CONTRACTOR'S LICENSE

- 1.1 On any bid amounting to \$50,000 or more, the Contractor shall certify that s/he is licensed under Act 377 of the 1976 Louisiana Regular Legislative Session and show the contractor license number and the bid number on the front portion of the envelope; except projects financed, partially or wholly, with Federal Funds, provided that any successful Bidder before signing Contract thereon, files application for a license and pays the fee as provided in this Act and complies with all terms and provisions of this Act and with the rules and regulations of the Licensing Board.

##### CONTRACTOR'S AFFIDAVIT

- 1.2 In accordance with the Louisiana R.S. 38:2190 - 2220, if the Contract is awarded to the successful Bidder, the bidder shall, at the time of the signing of the Contract, execute the AFFIDAVIT included in the Contract Documents.

##### INTEREST

- 1.3 There shall be no payment of interest on money owed.

### ARTICLE 2

#### PAYMENTS AND COMPLETION

##### SUBSTANTIAL COMPLETION

- 2.1 The Owner will issue a NOTICE OF ACCEPTANCE for the Contractor to record with the Clerk of Court in Lincoln Parish.

##### FINAL COMPLETION AND FINAL PAYMENT

- 2.2 The Contract is to provide that the contractor is not to be paid more than ninety percent (90%) of the amount of the contract upon completion of the work. The Contractor shall record the NOTICE OF ACCEPTANCE with the Lincoln Parish Clerk of Court and shall furnish a CLEAR LIEN CERTIFICATE from the Clerk of Court within forty-five days after recordation of NOTICE OF ACCEPTANCE. At that time, the remaining ten percent (10%) will be paid.

##### LIQUIDATED DAMAGES

- 2.3 The Owner will suffer financial loss if the Project is not substantially complete on the date set forth in the CONTRACT DOCUMENTS. The Contractor (and/or Surety) shall be liable for and shall pay to the Owner Liquidated Damages for each calendar day of delay until the work is Substantially Complete.

The Completion Time stated in Consecutive Calendar Days and the Liquidated Damages stated in Dollars Per Day are listed in the PROPOSAL FORM

### ARTICLE 3

#### INSURANCE

**INSURANCE:** Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. **The cost of such insurance shall be included in the Contractor's bid.**



A. MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. Insurance Services Office form number GL 0002 (Ed. 1/73) covering Comprehensive General Liability and Insurance Services Office form number GL 0404 covering Broad Form Comprehensive General Liability; or Insurance Services Office Commercial General Liability coverage ("occurrence" form CG 0001). **"Claims Made" form is unacceptable. The "occurrence form" shall not have a "sunset clause."**
2. Insurance Services Office form number CA 0001 (Ed. 1/78) covering Automobile Liability and endorsement CA 0025 or CA 0001 12 90. The policy shall provide coverage for owned, hired, and non-owned coverage. If an automobile is to be utilized in the execution of this contract, and the vendor/contractor does not own a vehicle, then proof of hired and non-owned coverage is sufficient.
3. Workers' Compensation insurance as required by the Labor Code of the State of Louisiana, including Employers Liability insurance.

B. MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage.
2. Automobile Liability: \$1,000,000 combined single limit per accident, for bodily injury and property damage.
3. Workers Compensation and Employers Liability: Workers' Compensation limits as required by the Labor Code of the State of Louisiana and Employers Liability coverage.

C. BUILDER'S RISK COVERAGE

A General Contractor shall purchase and maintain property insurance upon the entire work included in the contract for an amount equal to the greater of the full-completed value or the amount of the construction contract including any amendments thereto. The general contractor's policy shall provide "ALL RISK" Builder's Risk Insurance (extended to include the perils of wind, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure.) The "ALL RISK" Builder's Risk Insurance must also cover architects' and engineers' fees that may be necessary to provide plans and specifications and supervision of work for the repair and/or replacement of property damage caused by a covered peril not to exceed 10% of the cost of those repair and/or replacements.

Flood coverage shall be provided by the Contractor on the first floor and below for projects North of the Interstate Corridor beginning at the Texas-Louisiana border at Interstate 10 East to the Baton Rouge junction of Interstate 12, East to Slidell junction with Interstate 10 to Louisiana-Mississippi border. Flood sub-limit shall equal an amount no lower than ten percent (10%) of the total contract cost per occurrence. Coverage for roofing projects shall not require flood coverage.

On projects South of this corridor, flood coverage shall be provided by the State of Louisiana, as the owner, through the National Flood Insurance Program (NFIP). The Contractor will be liable for the \$5,000 deductible on the NFIP policy from the Notice to Proceed date through the Notice of Final Acceptance date of the project.

A specialty contractor shall purchase and maintain property insurance upon the system to be installed for an amount equal to the greater of the full-completed value or the amount of the contract including any amendments thereto. The specialty contractor may provide an installation floater with the same coverage as the "ALL RISK" Builder's Risk Insurance policy.

The policy must include the interest of the Owner, Contractor and Subcontractors as their interest may appear. The contractor has the right to purchase coverage or self-insure any exposures not required by the bid specifications, but shall be held liable for all losses, deductibles, self-insurance for coverages not required.

Policies insuring projects involving additions, alterations or repairs to existing buildings or structures must include and endorsement providing the following:

In the event of a disagreement regarding a loss covered by this policy which may also be covered by the State of Louisiana policy of self-insurance or any commercial property insurance policy purchased by the State of Louisiana, Office of Risk Management (ORM) covering in excess of the State of Louisiana, policy of self-insurance, this company agrees to follow the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, this company and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers will select a competent and impartial umpire. The appraisers will then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each insurance company (or ORM) agree that the decision of the appraisers and the umpire if involved, will be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

D. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

E. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverage

- a. The Agency, its officers, officials, employees, Boards and Commissions and volunteers are to be added as "additional insured" as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its officers, officials, employees or volunteers. It is understood that the business auto policy under "Who is an insured" automatically provides liability coverage in favor of Grambling State University and the State of Louisiana.
- b. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Agency, its officers, officials, and employees, Boards and Commissions or volunteers.
- c. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Workers' Compensation and Employers Liability Coverage

The insurer shall agree to waive all rights of subrogation against the Agency, its officers, officials, employees and volunteers for losses arising from work performed by the Contractor for the Agency.

3. All Coverage

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, or reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the Agency.

F. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A.M. Best's rating of **"A- VI or higher"**. This requirement will be waived for workers' compensation coverage only for those contractors whose workers' compensation coverage is placed with companies who participate in the State of Louisiana Workers' Compensation Assigned Risk Pool or the Louisiana Workers' Compensation Corporation.

G. VERIFICATION OF COVERAGE

Contractor shall furnish the Agency with certificates of insurance affecting coverage required by this clause. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates are to be received and approved by Grambling State University before work commences. Grambling State University reserves the right to require complete, certified copies of all required insurance policies, at any time.

H. SUBCONTRACTORS

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.

ARTICLE 4

QUALITY

STANDARD OF QUALITY

- 1.1 Where catalog numbers and/or manufacturer's names are referred to in the specifications, they are used for the purpose of conveying to the prospective bidders the type and design of equipment, or supplies desired; but it shall be understood that bidders may submit on other makes in lieu of that mentioned, providing such other item is similar in design and equal in quality. It is not expected that the items of all manufacturers shall conform exactly to every detail and dimension mentioned in the specifications; but the essential features of the items mentioned shall be provided in the items to be furnished.

## DIVISION 1 - GENERAL REQUIREMENTS

### A. SUMMARY OF THE WORK

1. Work under this Contract shall include, but is not necessarily limited to, the following as summarized;
  - a. Cooling Tower Replacement for Jacob T. Stewart

### B. LAWS, RULES AND REGULATIONS

1. Contractor shall comply with all applicable federal, state, local and University laws, ordinances, rules and regulations and shall: furnish and pay for all required permits, licenses and bonds; pay all charges and fees, and give all notices necessary and incidental to the due and lawful work required under this project.

### C. ALTERNATES

1. Base Bid

### D. SITE INSPECTIONS AND PROJECT MEETINGS

1. Site Inspections

Each bidder by making a bid represents that s/he has visited the site and familiarized themselves with the local conditions under which the work is to be performed.

2. Pre-Work Conference

Prior to the Contractor beginning any work on this project, the University will conduct a Pre-Work Conference to review and approve the Contractor's work schedule and inform the Contractor of any special conditions, controls and regulations that apply to the project.

### E. TEMPORARY FACILITIES AND CONTROLS

1. Safety Conditions

The Contractor shall post adequate warning signs and maintain safety lights as required to warn persons of hazardous conditions.

2. Security

The Contractor shall be responsible for security of his equipment, materials, etc., at the project site for the duration of the contract.

### F. MATERIAL AND EQUIPMENT

1. Transportation and Handling

The Contractor shall provide for all transportation and handling required for the work on this project.

2. Storage and Protection

The Contractor shall be responsible for storage and protection of equipment and materials. The Contractor shall Protect all property of the Owner, and shall repair same, if damaged.

## INDEMNIFICATION AGREEMENT

The \_\_\_\_\_ (Contractor) agrees to protect, defend, indemnify, save, and hold harmless the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of any act or omission of \_\_\_\_\_ (Contractor), its agents, servants, and employees, or any and all costs, expense and/or attorney fees incurred by \_\_\_\_\_ (Contractor) as a result of any claim, demands, and/or causes of action except those claims, demands, and/or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its agents, representatives, and/or employees. \_\_\_\_\_ (Contractor) agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent.

Accepted by \_\_\_\_\_  
Company Name

Signature \_\_\_\_\_

Title \_\_\_\_\_

Date Accepted \_\_\_\_\_

Is Certificate of Insurance Attached? \_\_\_\_\_ Yes \_\_\_\_\_ No

Contract No. \_\_\_\_\_ For Grambling State University

Purpose of Contract: \_\_\_\_\_

## Mandatory Pre-Bid Conference

Where: Purchasing Department Conference Room – 403 Main Street – Grambling, LA

When: March 30, 2010

Time: 2:00 p.m.

This signed statement certifies that the vendor named below has visited the job site and is familiar with all conditions surrounding fulfillment of the specifications for this project.

\_\_\_\_\_  
Vendor's Company Name

\_\_\_\_\_  
GSU Project Name

\_\_\_\_\_  
GSU Representative

\_\_\_\_\_  
Vendor's Signature

Present this form to Project Manager at Pre-Bid Conference. Return this signed form with your bid response.

Grambling State University  
GRAMBLING, LOUISIANA

PROPOSAL FORM

Purchasing Department  
Grambling State University  
403 Main Street  
Grambling, LA 71245

\_\_\_\_\_ 2009

ATTN:

Pursuant to and in compliance with your request for proposals covering \_\_\_\_\_ at Grambling State University, Grambling, Louisiana, 71245, the undersigned hereby proposes to furnish all labor, equipment, tools, and materials, and to perform all work under the Contract Documents, of which this proposal is part, and acknowledges receipt of the following addenda \_\_\_\_\_. The undersigned declares that he has carefully examined the location and site condition, is familiar with existing conditions, has examined the Contract Documents covering the projected work and proposes by these presents to furnish all labor, equipment, tools, materials, supervision, etc. and to contract for and execute all items of work for the satisfactory completion of this project and have same ready for use and final acceptance within \_\_\_\_ calendar days, all in accordance with the Contract Documents.

The undersigned bidder agrees that within five days after notification that contract is ready for signature, that same will be executed and that satisfactory surety bond in a sum equal to the contract price will be provided to the University.

Attached hereto is a bid guaranty payable to Grambling State University in the amount of 5% of total bid as follows:

Certified Check in the amount of \_\_\_\_\_ (\$\_\_\_\_\_).

OR Bid Bond in the amount of \_\_\_\_\_ (\$\_\_\_\_\_).

LIQUIDATED DAMAGES:

The undersigned agrees that the Owner may retain the sum of \$150.00 per day from the amount of the Compensation to be paid him for each day after the above stated completion date, Sundays and Holidays included, that the work remains incomplete. This amount is agreed upon as the proper measure of Liquidated Damages which the Owner will sustain per day by the failure of the undersigned to complete the work at the stipulated time and is not to be construed in any sense as a penalty.

If this proposal shall be accepted and the undersigned shall fail to execute the contract and furnish performance bond as herein provided, then the proposal guarantee shall become the property of the University; otherwise, the said proposal guaranty shall be returned to the undersigned.

Bidder certifies that he has visited the job site at Grambling State University, and is fully aware of what is expected of the successful bidder (s)

\_\_\_\_\_  
Louisiana Contractor's License Number

Firm Name` \_\_\_\_\_

Authorized Signature \_\_\_\_\_

\_\_\_\_\_  
Title

Phone/Fax Numbers

---

Date

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LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Owner to provide name and address of owner)

BID FOR: Cooling Tower Replacement for Jacob T. Stewart  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Grambling State University and dated: \_\_\_\_\_

\_\_\_\_\_  
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) \_\_\_\_\_

**TOTAL BASE BID:** For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" \* but not alternates) the sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**ALTERNATES:** For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

**Alternate No. 1** (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**Alternate No. 2** (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**Alternate No. 3** (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**NAME OF BIDDER:** \_\_\_\_\_

**ADDRESS OF BIDDER:** \_\_\_\_\_  
\_\_\_\_\_

**LOUISIANA CONTRACTOR'S LICENSE NUMBER:** \_\_\_\_\_

**NAME OF AUTHORIZED SIGNATORY OF BIDDER:** \_\_\_\_\_

**TITLE OF AUTHORIZED SIGNATORY OF BIDDER:** \_\_\_\_\_

**SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER \*\*:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

\* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

\*\* If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(A)(1)(c) or RS 38:2212(O) .

**BID SECURITY** in the form of a bid bond, certified check or cashier's check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.

**LOUISIANA UNIFORM PUBLIC WORK BID FORM**  
**UNIT PRICE FORM**

**TO:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Owner to provide name and address of owner)

**BID FOR:**  
**Cooling Tower Replacement for Jacob T. Stewart**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )

Wording for "DESCRIPTION" is to be provided by the Owner.  
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

STATE OF LOUISIANA

NAME \_\_\_\_\_

PARISH OF LINCOLN

LOCATION \_\_\_\_\_

### AFFIDAVIT

Before me, the undersigned authority, duly commissioned and qualified within and for the state and parish aforesaid, personally came and appeared \_\_\_\_\_ representing \_\_\_\_\_ who, being by me first duly sworn deposed and said that he has read this affidavit and does hereby agree under oath to comply with all provisions herein as follows:

#### PART I

Section 2220 of Part II of Chapter 10 to Title 38 of the Louisiana Revised Statutes of 1950 as amended.

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction of the public building or project or in securing the public contract were in the regular course of their duties for affiant; and

(2) That no part of the contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction of the public building or project were in the regular course of their duties for affiant.

#### PART II

Section 2190 of Part I of Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 as amended.

The affiant, if he be an architect or engineer, or representative thereof, does not own a substantial financial interest, either directly or indirectly, in any corporation, firm, partnership, or other organization which supplied materials for the construction of a public building or project when the architect or engineer has performed architectural or engineering services, either directly or indirectly, in connection with the public building or project for which the materials are being supplied.

For the purpose of this Section, a "substantial financial interest" shall exclude any interest in stock being traded on the American Stock Exchange or the New York Stock Exchange.

That affiant, if subject to the provisions of this section, does hereby agree to be subject to the penalties involved for the violation of this section.

PART III

That affiant does hereby state that he has read and agrees to comply with and be subject to the provisions of Part V of Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950, being Sections 2290 through 2296 of Title 38 as amended.

Signature of Affiant: \_\_\_\_\_

SWORN TO AND SUBSCRIBED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 200

.

Signature of Notary: \_\_\_\_\_

Grambling State University

Grambling, Louisiana

This Agreement, made and executed, on this \_\_\_\_\_ day of the month \_\_\_\_\_ in the year of our Lord, TWO THOUSAND and TEN, by and through \_\_\_\_\_, Grambling State University, the Party of the First Part, and hereinafter designated as "University" and \_\_\_\_\_, Contractor, domiciled and doing business in \_\_\_\_\_, Party of the Second Part, and hereinafter designated as Contractor.

WITNESSETH, That, in consideration of the covenants and agreements herein contained to be performed by the parties hereto and of the payments hereinafter agreed to be made, it is mutually agreed as follows:

The Contractor shall and will provide and furnish all materials, equipment and labor and perform the work required to complete in a thorough and workmanlike manner, to the satisfaction of the University, project entitled \_\_\_\_\_, in strict accordance with the Plans and Specifications which are on file in the Purchasing Department at Grambling State University. The bid on this project, numbered \_\_\_\_\_, was opened on \_\_\_\_\_, at \_\_\_\_\_. The plans and specifications and the Proposal Form are made a part hereof as fully as if set out herein and hereby become a part of this contract. Contract amount is \$\_\_\_\_\_.

It is agreed and understood between the parties hereto that the Contractor agrees to accept and the University agrees to pay for the work at the price stipulated in said Proposal, such payment to be in lawful money of the United States, and the payment shall be made at the time and the manner set forth.

Performance will begin \_\_\_\_\_ Grambling State University

\_\_\_\_\_

BY: \_\_\_\_\_ BY: \_\_\_\_\_

TITLE: \_\_\_\_\_ TITLE: \_\_\_\_\_

**COOLING TOWER REPLACEMENT FOR  
JACOB T STEWART BUILDING  
GRAMBLING STATE UNIVERSITY  
GRAMBLING, LOUISIANA**

**SPECIFICATION CONTENTS**

March 2010

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**HVAC**

SECTION 15600 – HVAC GENERAL CONDITIONS  
SECTION 15610 – HVAC EQUIPMENT  
SECTION 15640 – HVAC PIPING SYSTEMS  
SECTION 15650 – HVAC PIPING SPECIALTIES  
SECTION 15660 – HVAC INSULATION  
SECTION 15670 – HVAC WATER TREATMENT  
SECTION 15680 – HVAC TEMPERATURE CONTROLS  
SECTION 15690 – HVAC TEST AND BALANCE

**GENERAL:**

Bidding and/or Negotiation Requirements, Conditions of the Contract, and pertinent portions of Division One of these specifications, apply to the Work of this Section as fully as though repeated herein.

Provide Bid Alternates as follows:

**Bid Alternate No. 1**

Provide bid add for providing optional 304 stainless steel basin and support members of cooling tower. Basin shall be welded construction. All components in contact with water in the basin, including inlet screen, support frame, braces and brackets, sumps (if provided) and hardware shall be constructed of 304 stainless steel.

**SCOPE:**

Furnish all labor, materials and equipment necessary to provide the following systems, each complete and in proper operating condition, all as specified herein and/or shown on drawings.

1. Demolition of Existing Equipment: Remove existing cooling tower, piping, electrical, controls, materials, and systems as required to support installation of new tower and required components. Site inspection is required to verify the extent of demolition. Owner has first claim on all removed materials or equipment. Contractor shall dispose of all items not retained by Owner.
2. Furnish and install all HVAC equipment as indicated on drawings.
3. Furnish and install HVAC piping with associated specialties and insulation.
4. Furnish water treatment piping systems and components as needed and reconnect to existing water treatment system. Contractor shall verify that existing water treatment system protects new tower the same as current installation.
5. Furnish temperature control systems and components as needed and reconnect to existing temperature control system. Contractor shall verify that existing temperature control system controls new tower the same as original installation.
6. Perform testing and balancing as required for mechanical systems. Testing and balancing may be performed by Mechanical Contractor.
7. Provide additive bid alternate to provide type 304 stainless steel basin and supports instead of galvanized.

Outages: Contractor shall coordinate all modifications to existing systems with Owner. Timing of all system outages shall be prior approved by Owner.

Though design has been coordinated with existing conditions or other trades where possible, drawings are still diagrammatic and show only general arrangement and extent of work. Verify all dimensions at the building site and check existing conditions before beginning work. Minor revisions shall be made as necessary to install the work in harmony with other crafts.



## **ORDINANCES, RULES, AND REGULATIONS:**

Materials and construction shall conform to requirements of Building Codes and laws in force in locality in which work is to be done. All materials and construction shall conform to requirements of Standard 90A of National Fire Protection Association.

## **PRIOR APPROVAL**

The materials, products and equipment described herein establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitutions shall be allowed after bidding.

No substitution will be considered unless written request for approval has been submitted by the Vendor and has been received by the Engineer at least seven (7) days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including model numbers, drawings, cuts, performance and test data and any other information necessary for evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. It shall be the responsibility of the Vendor to include in his proposal all changes required of the Contract Documents if the proposed product is used. Prior approval is given contingent upon Contractor being responsible for any costs that may be necessary to modify the space or facilities needed to accommodate the materials and equipment approved.

If the Engineer approves any proposed substitution, such approval will be set forth in an addendum. Bidders shall not rely upon approvals made in any other manner.

## **SUBMITTAL DATA:**

Submit for approval six (6) copies of drawings and/or descriptive data on materials, equipment listed or required for complete installation. Submittals will normally be reviewed and issued within 10 working days of receipt by Engineer.

Submittal data shall include the following:

1. HVAC Equipment
  - Cooling Tower
  - Cooling Tower Layout Sketch (if cooling tower other than design basis is proposed)
2. HVAC Piping Specialties
  - Pipe Expansion Joints
  - Piping Components (valves, etc.)
3. HVAC Insulation
  - Cold Water Makeup
4. HVAC Temperature and Control System
5. HVAC Testing and Balancing Report

## **WARRANTY:**

All work provided under this contract shall be subject to a minimum one-year warranty from date of final acceptance of work. The warranty shall include:

- Prompt repair or replacement of equipment or system failure. Repair or replace any defects without cost to Owner including all parts, labor, travel time, expenses.
- Extended warranties shall be provided on all other equipment so specified in other sections.

### **OPENINGS, CUTTING AND PATCHING:**

Verify that all openings, shafts, chases, furred spaces, etc., required for work or to conceal work in any part of structure are properly located and of ample size.

Furnish and install during process of construction, necessary sleeves, thimbles, hangers, inserts, etc., required for work. Cover, caulk, flash, or otherwise make waterproof, all openings left in the structure for work.

Where work is required in existing structures, contractor shall saw, cut, drill, sleeve or otherwise provide for installation of mechanical systems. Remove all debris and patch surfaces as required to match existing.

### **FOUNDATIONS, SUPPORTS:**

Unless otherwise specified or shown on drawings, provide foundations and supports necessary for properly supporting work and equipment, installing isolation materials necessary to prevent transmission of vibration to building structure.

### **PAINTING:**

Mechanical Contractor shall leave all surfaces clean, rust free and ready for painting. Painting of mechanical materials or equipment shall be performed under this scope of work by sub-contractor that specializes in painting. Painting sub-contractor shall have been established for longer than three years with specialization in painting.

- All equipment shall have factory finish or shop coat of paint as specified, and any surfaces scratched or marred in handling shall be touched up to match factory finish.
- All uninsulated steel surfaces exposed to sight within building, which do not have factory prime or galvanized coating, shall be cleaned and painted with one coat of rust inhibiting primer. In addition, all surfaces in finished spaces shall also be painted with two coats of finish paint in a color selected by the Engineer.
- Steel items exposed outside the building (e.g., pipe/equipment supports, exposed ferrous items, piping and hangers, etc.) shall be cleaned and painted with one coat of rust inhibiting primer and two coats of asphaltic base aluminum paint. Insulated steel pipes outside the building shall be cleaned and painted with one coat of rust inhibiting primer before installing insulation.
- All exposed piping outside the building serving cooling tower (both new and existing) shall be painted with UV resistant paint.

### **STARTING AND TESTING:**

Start, test installation, and instruct Owner in the proper operation and maintenance procedures on all installed equipment. Refer to Test and Balance Requirements.

Operation and Maintenance Manual: Three (3) indexed bound sets of the operation and maintenance manuals shall be provided to the Owner at turnover and is required for final acceptance.

As-Built Drawings: The HVAC subcontractor shall progressively record all HVAC drawing changes which shall be available at all times for review by the Owner. As-built drawings shall be submitted to Owner at final acceptance of the project.

**ENGINEER FIELD OBSERVATION:**

Contractor shall give Engineer 24-hour notification of all piping systems requiring testing for witnessing. Contractor shall not bury, conceal, or insulate any system until directed by Engineer.

**END OF SECTION**

**GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

**Manufacturers:** Provide equipment specified herein or shown on drawings. The design basis shown on plans is based on Evapco Cooling Tower as an exact duplicate of the existing tower to be replaced. The reuse of existing piping permits extensive salvage of existing piping and the use of flexible pipe connection to the tower.

Alternate tower manufacturers and models are also listed on plans. If an alternate tower is selected by installing contractor, the contractor and vendor shall verify equipment meets scheduled performance and electrical criteria and is suitable for available mechanical space, arrangement, and service access limitations prior to bid. Provide detailed equipment sketch with submittal showing proposed piping, tower arrangement., any necessary additional tower supports that may be required.

**Penetrations and Seals:** Contractor or Manufacturer shall provide rubber grommets sized to seal air leaks, eliminate vibration and abrasions where piping, conduit and control wiring pass through unit case.

**COOLING TOWER, multicell, galvanized, belt drive fans:**

Evapco AT as indicated for design basis, or approved Baltimore Aircoil, Marley or approved equivalent. Refer to General section of this specification for equipment other than scheduled on drawings.

For ease of installation, note that the design basis is a direct replacement for the existing cooling tower (18'-0"L x 7'-10"W x 12'-4.38"H), which allows existing piping to match replacement tower pipe inlets and outlets. If a cooling tower other than the design basis is proposed, the Contractor shall submit for approval an equipment layout drawing (1/4" = 1'-0" scale or larger) indicating equipment layout, revised pipe routing, structural support requirements, and service clearances based on proposed cooling tower.

**General:** Provide factory assembled and tested, induced draft counterflow cooling tower complete with fill, fan, louvers, accessories, and rigging supports. Cooling tower characteristics and capacity shall be as indicated on drawings.

**Submittals:** Provide certified drawings of the cooling tower, sound data, recommended steel support indicating weight loadings, wiring diagrams, installation instructions, operation and maintenance instructions, and thermal performance guarantee by the manufacturer.

**Quality Assurance:**

- Test and certify cooling tower thermal performance according to CTI Standard 201.
- Test and certify cooling tower sound performance according to CTI ATC-128.
- Meet or Exceed energy efficiency per ASHRAE 90.1.

**Warranty:** Motor and drive system shall have five (5) year comprehensive warranty against materials and workmanship including motor, fan, bearings, mechanical support, sheaves, bushings and belt. Cooling tower shall have one (1) year comprehensive warranty from start-up, not to exceed eighteen (18) months from shipment on the unit.

**Fans:** Axial propeller, individually adjustable wide chord blade extruded aluminum installed in a closely fitted cowl with venturi air inlet for maximum efficiency, covered with a heavy gauge hot dipped galvanized fan guard.

Fan shall have a maximum sound pressure level of 90 dB(A) when measured at 5 feet above the fan discharge during full speed operation in accordance with CTI Standard ATC-128.

**Water Distribution System:** Tower shall evenly distribute of water over fill material with pressurized spray tree. Unit piping shall be Schedule 40 PVC and nozzles shall be non-clogging, ABS Plastic, threaded into branch piping.

**Collection Basin:** Collection basin material shall be galvanized steel. Provide removable stainless-steel strainer with openings smaller than nozzle orifices. All joints shall be bolted and sealed watertight or welded. Provide overflow, makeup and side drain connections. Provide flume plate between cells of multiple-cell cooling towers.

**Casing:** Casing shall be galvanized steel. Casing panels shall totally encase the fill media to protect the fill from damage due to direct atmospheric contact. Fasteners shall have corrosion resistance equal to or better than materials being fastened. All joints shall be sealed watertight. Welded connections shall be continuous and watertight.

**Fill Media:** Fill Media shall be PVC; resistant to rot, decay and biological attack; formed, crossfluted bonded together for strength and durability in block format for easy removal and replacement; suitable for use as a working surface; self extinguishing with flame spread rating of 5 per ASTM E84-81a; able to withstand continuous operating temperature of 130°F; and fabricated, formed and installed by the manufacturer to ensure water breaks up into droplets.

**Drift Eliminators:** Drift eliminators shall be same material as fill with 0.001% drift rate.

**Air Inlet Louver Screens:** Air inlet louver screens shall be formed PVC mounted in G-235 galvanized steel frames for easy removal; designed to completely block direct sunlight from entering and water from splashing out of the cooling tower.

**Water Level Control:** Water level control shall have brass mechanical makeup water valve and plastic float with an adjustable linkage.

**Motors and Drives:** Motor shall be single speed with TEFC enclosure. The fan drive shall be belt drive designed for 150% of the motor nameplate horsepower. Belt shall be mutli-groove, solid back V-belt type neoprene reinforced with polyester cord. Sheaves shall be aluminum alloy if located inside the airstream. Bearings shall be heavy duty, self-aligning pillow block bearings with lubrication lines extended to side access door. Minimum L10 life for bearings shall be 75,000 hours.

**Accessories:**

- Stainless steel suction strainer/anti-vortex screen.
- Extended lubrication lines
- Provide vibration switches to stop fans upon detection of excess vibration (NEMA 4 enclosure).
- Motor(s) shall be TEFC, premium efficiency.
- Electric basin heaters as scheduled on drawings (include associated thermostats).
- Low water cut-off.
- See equipment schedule on drawings for additional accessories.
- As bid alternate, provide Type 304 stainless basin. Refer to **Bid Alternate No.1** in Section 15600.

**END OF SECTION**

## **DIVISION 15**

## **SECTION 15640 - HVAC PIPING SYSTEMS**

### **GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

**Furnish, install in neat, workmanlike manner, all piping shown on drawings, or specified or required to provide complete, properly operating installation.**

**Design has been coordinated with existing conditions and other trades where possible, however drawings are diagrammatic and Contractor shall verify clearances and routing prior to fabrication and installation.**

**Piping shall run parallel with lines of building unless noted otherwise. Pipe, fittings, and valves shall have sufficient clearance from other work to permit finished covering to be at least 1/2" from other work or finished covering of other piping.**

**Piping shall be installed to insure unrestricted circulation, eliminate air pockets and permit complete drainage of piping systems. Provide manual air vents at high points and drains at low points in piping system. Piping shall be so installed that it can expand or contract freely without damage to other work or injury to itself or to connected equipment. Provide any necessary expansion loops, swing joints and anchors to allow for thermal expansion and movement of connected equipment.**

**Horizontal drain piping shall be graded downward in direction of flow, at least 1/4 in. per ft. wherever possible, but in no case less than 1/8 in. per ft.**

**All pipes shall be accurately cut to measurements established on job by Contractor, worked into place without springing or forcing.**

**Flushing: All new and existing piping shall be cleaned and flushed prior to connecting HVAC equipment to piping loop.**

### **PIPING MATERIALS:**

**Cold Water Make-up Piping: Type L hard temper copper tubing with wrought copper sweat type fittings.**

**Condenser Water Piping:** Design basis Tower: Schedule 40 black steel pipe ASTM A-53 with seamless steel welding fittings for pipe 2-1/2" and larger and standard weight malleable iron screwed pattern fittings for pipe 2 in. and smaller. Install dielectric union at all connections between copper and steel pipe.

Alternate Tower: Contractor may use Schedule 80 PVC pipe and fittings with solvent cement joints with flanged connection to existing condenser water piping 12 inches above finished grade.

**Drain Piping:** Drain piping shall be same material as existing.

### **FITTINGS/JOINTS:**

**Copper piping:** Made up with soldering joints using sweat-type fittings and lead free solder alloys. Pipe shall be cut square, all burrs removed before assembly. Pipe and fittings shall be carefully cleaned, soldered with solder containing 95% tin, and 5% antimony, using noncorrosive flux. Refrigerant piping shall be made using long radius

fittings and silver solder joints for all fittings except where recommended by manufacturer to prevent damage to valves or other system components.

**Welded Joints:** Welded joints shall be made by electric arc method, using direct current in accordance with standards of American Welding society. Engineer reserves right to test work of any welder employed on job, at Contractor's expense, and if work of welder is found unsatisfactory, welder will be prevented from doing further welding. Welding electrodes shall have coating diameter as recommended by manufacturer for type, and thickness of work being done.

**Dielectric Insulating Couplings:** **Provided where connections are made between ferrous and non-ferrous water piping.**

### **PIPE SUPPORTS, SUSPENDED LOADS:**

**In general, horizontal runs of pipe shall be suspended from overhead construction with steel clevis type hangers Grinnell 260, Fee & Mason 239, or approved equal. Hanger rods shall be secured to bar joist or beam construction, or anchored to concrete construction with malleable iron inserts.**

**Hangers for copper piping shall be Grinnell CT-138R or Fee & Mason 307, or equal, brass, split ring type.**

**Where two or more pipes run parallel, at same elevation, they may be supported on channel iron or Unistrut trapeze hangers, hung from overhead construction by rods same as specified for single hung pipe, except that hanger rods shall be increased in size to support additional weight. Lower ends of hanger rods shall be threaded two inches for adjustment, provided with nuts top and bottom of channels.**

**Pipe support spacing and rod size shall be as follows:**

Nominal Pipe Size	Hanger Spacing			Rod Size
	Steel (Sch. 40)	Copper (K or L)	PVC (100°F MAX)	
1/2"	7	5	4	3/8
3/4"	7	5	4	3/8
1"	7	6	4	3/8
1 1/4"	9	6	4	3/8
1 1/2"	9	8	4	3/8
2"	10	8	4	3/8
2 1/2"	11	9	5	1/2
3"	12	10	5	1/2
4"	14	10	5	5/8

Provide additional supports at concentrated loads and at each change in direction.

**PIPE SUPPORTS, FLOOR PIERS:**

Field fabricated as detailed on drawings or approved equivalent. Supports shall be suitable for diameter and weight of piping. Space supports according to industry standards or where indicated and install to allow for pipe expansion and contraction.

**TESTING:**

**All piping shall be tested and proven tight to satisfaction of Engineer before covering is applied.**

- **All new piping shall be tested hydrostatically to 50-psig pressure for 20 minutes without drop in pressure.**
- **Existing condenser water piping intended for reuse shall be power washed and hydrostatically tested to 50-psig pressure for 24 hours without drop in pressure.**

**END OF SECTION**



**DIVISION 15****SECTION 15650 - HVAC PIPING SPECIALTIES****GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

**VALVES:**

**Gate valves: Valves 2" and smaller to be Class 125, bronze body, non-rising stem, screwed bonnet, solid wedge disc, full ports, integral bronze seat. Valves 2 1/2" and larger to be Class 125, flanged iron body, bronze trim, non-rising stem, bolted bonnet, tapered solid wedge disc, bronze seat rings.**

**Ball valves: Valves 2" and smaller to be two-piece bronze body, 600 psi non-shock cold water, full port, chrome plated ball, reinforced RTFE seats, lever handle, provide extension stems for insulated piping.**

**Butterfly valves: DeZurik, Centerline Series A, Demco Series W, Crane or approved equivalent, lug type butterfly valves, minimum 125 psig, iron body, bronze disc, stainless steel stem, replaceable Buna-N seat for service temperature, tight close-off, with multi-lock lever operator. Butterfly valves are required if water flow must be balanced or controlled.**

PURPOSE	STYLE	VALVE MANUFACTURER'S MODEL				
		CRANE	MILWAUKEE	NIBCO	STOCKHAM	WATTS
<b>Shut off</b>	Gate – Threaded	438	105	T-113	B-100	B-3000
	Gate – Sweat	1320	115	S-113	B-108	B-3001
	Gate – Flanged	461	F-2882A	F-619	G-612	406E
	Ball – Threaded	9211	BA-400	T-585-70	T-285	B-6080
	Ball – Sweat	9212	BA-450	S-585-70	S-285	B-6081
	Butterfly – Lug Type	44	ML-123B	LD-2100	LD-752	DBF-03-121

**Pipe Expansion Joints:** Unisource Manufacturing, Inc. UPCS-FLG or approved equivalent stainless steel braided connectors. Though typically used for connecting piping to vibrating equipment, the design intent for this project is to allow Contractor some flexibility in aligning new cooling tower with existing piping.

The stainless steel connectors shall combine 300 series corrugated stainless steel hose and braid with weld-on carbon steel end fittings. In 8" diameter piping and larger, provide braided-braid reinforcing.

**END OF SECTION**

**GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

All surfaces shall be clean and dry when covering is applied. Covering shall not be applied before piping or equipment has been tested and proven free of leaks. On insulated piping, covering shall be protected with metal saddles specified under "Piping".

All materials shall conform to NFPA 90A Fire Hazard Standard, with maximum 25-50 flame spread, smoke developed ratings.

**MAKE-UP WATER PIPING INSULATION:**

Provide new 1" thick insulation for exposed water piping exterior to building. Existing exposed make-up water piping shall be reinsulated to match new piping insulation and covering.

Insulation shall be Owens Corning SSL II, John Manville Micro-Lok or approved equivalent, pipe insulation with all-service vapor retarder jacket. Jacket and longitudinal lap shall be adhered with pressure sensitive adhesive closure. Fittings shall be insulated with PVC fitting covers. Piping components requiring access shall have removable coverings.

- Where pipe routed above grade and exposed on outside of building, provide 0.016 aluminum smooth jacket on piping and fittings with 2" overlap at all joints. Seal joints watertight and provide aluminum bands on 18" centers (i.e., on 3 foot jacket section ... provide on band at each lap and one at center).

**END OF SECTION**

**GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

Mechanical Contractor shall contract with the current chemical treatment supplier (Wayne Allen - Certified Lab, 318-355-5976) for water treatment. Solenoid bleeds, etc. shall be reinstalled as needed for workable water treatment system.

Provide initial cleaning and pacification of wetted metal surfaces prior to initial startup.

Mechanical Contractor shall contract water treatment contractor to verify existing water treatment system is complete and operational prior to placing new towers in operation.

**Make-up Water Meter:** Remove and reinstall existing make-up water meter and controls to serve new tower.

**Chemicals:** Grambling State University is currently providing and maintaining existing water treatment in tower loop, so no new water treatment chemicals are required.

**END OF SECTION**

**GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

**Manufacturer:** Temperature Control Systems shall be Johnson, Trane, Siemens, or approved equivalent, direct digital control (DDC) type, installed by representatives of control manufacturer.

**Scope:** Provide complete temperature controls and safety components as indicated below:

The Contractor shall be responsible for the following temperature control work. Boundaries of work between the Mechanical, Control, and Electrical Contractors shall be determined by the Prime Contractor.

- Furnishing and installing certain HVAC and temperature control components including low-voltage wiring and thermostats, etc.
- Identifying all switches and instruments furnished under this contract with plastic nameplates as described in Section 15600, HVAC General Conditions.
- Low voltage signal cabling shall be routed within conduit.
- Furnish contactors and relays as required for connecting new tower to existing temperature controls.
- Furnishing, installing, and terminating power wiring, signal cables and associated conduits operating over 30 volts for motor controls, HVAC controls and temperature controls.
- Furnishing, installing, and terminating line voltage control and interlock wiring.
- Electrical work associated with temperature controls shall not proceed without approved temperature control wiring diagrams. Approved manufacturer's wiring diagrams showing electrical connection for the various items of equipment will be furnished to the Electrical Contractor by the Mechanical Contractor for all control wiring installations, operating above 30 volts. Control voltage (above 30 volts) signal cable routing and line voltage routing shall be by the Electrical Contractor under the direct supervision of the Mechanical Contractor.
- Electrical Contractor shall refer to Mechanical Contractor for exact requirements of mechanical equipment.
- Placing HVAC control system into operation.

**SUBMITTALS:** Six (6) copies of control wiring diagrams, including required interlocking wiring between motor controls, relays, etc., shall be submitted for Architect's approval. The following data/information shall be included:

1. Control system drawings including a sequence of operation and all pertinent data to provide a functional operating system.
2. Data sheets for all hardware and software control components.
3. A description of the installation materials including conduit, wire, flex, etc.

**WARRANTY:** The installation shall be warranted to be free from defects in workmanship and material for a period of one year from the date of job acceptance by the Owner. Any equipment, software, or labor found to be defective during this period shall be repaired or replaced without expense to the Owner. Factory authorized warranty service shall be available within 100 miles of jobsite.

**HVAC CONTROL SEQUENCE:**

**Cooling Tower:** This project consists of replacing an existing cooling tower; therefore, the temperature control system is existing. The existing temperature control system is anticipated to control the cooling towers as follows:

- For summer cooling, the cooling tower fans and motorized tower bypass valve shall be controlled through a local control panel and interlocked to operate only when the condenser pumps are running. An existing piping temperature sensor detector will sense the condenser water temperature and the control panel will control the bypass valve as needed.
- When the motorized bypass valve is open, all cooling water shall bypass the tower. As the cooling water temperature rises, the motorized bypass valve shall begin to close. The bypass valve shall continue to close as the water temperature rises. After the bypass valve is completely closed, the control panel shall energize one fan. As the cooling water temperature continues to rise, the second fan shall start.
- The bypass valve and fans shall cycle to maintain minimum 85 F (adjustable) condenser water temperature during summer. During intermediate seasons and winter cooling (ambient temperature of 65 or below), the fans will be cycled to maintain minimum 65 F (adjustable) condenser water temperature. Upon further drop in water temperature, condenser water bypass valve and tower fans shall cycle as required.

The control sequence described above shall be field verified and submitted for approval. The Contractor is responsible for connecting and testing the new tower with the existing temperature control system. Contractor shall furnish and install control wiring as required for new tower to communicate with existing temperature control system. Contractor shall verify that new cooling tower is properly controlled by existing temperature control system and demonstrate the same to end-user.

**Acceptance Procedure:** Upon completion, Contractor shall startup system and perform all necessary testing and run diagnostic tests to ensure proper operation.

- Prior to project acceptance and final payment, the interlocking of the new cooling towers with the existing temperature control system shall be reviewed and signed off by the Owner's representative and Engineer.

***END OF SECTION***

**GENERAL:**

All work specified in this Section shall be governed by the HVAC General Conditions 15600.

Test, balance and adjust new cooling tower and associated pumps.

Work shall consist of water flow setting as required, recording data, making tests and preparing reports. If not existing, the Contractor shall furnish and install required pressure and temperature taps on entering and leaving side of each condenser coil, condenser water pump, and cooling tower.

At Contractor's option, either the Mechanical or an independent Specialty Contractor may perform testing and balancing work.

Instruments used for measurement shall be accurate and calibration histories for each instrumentation shall be available for examination.

Final adjustments shall be within + 10% of design values. If not possible, the Engineer shall be notified in writing with explanation.

Before final acceptance of the system is made, the Contractor or balancing agency shall furnish to the Engineer five (5) reports with the following data (as applicable):

- Amperage draws of all motors and RPM.
- Temperature and pressure drop across existing condenser coils.
- Water flow and pressure drop across each pump.
- Typical balancing or manufacturer recommended readings for each cooling tower.

**END OF SECTION**

## **BID ALTERNATES**

### **COOLING TOWER REPLACEMENT FOR JACOB T. STEWART HALL GRAMBLING STATE UNIVERSITY GRAMBLING, LOUISIANA**

**March 2010**

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#### **BID ALTERNATE No. 1**

Provide bid add for providing optional 304 stainless steel basin and support members of cooling tower. Basin shall be welded construction. All components in contact with water in the basin, including inlet screen, support frame, braces and brackets, sumps (if provided) and hardware shall be constructed of 304 stainless steel.

**END OF BID ALTERNATES**

**COOLING TOWER REPLACEMENT FOR  
JACOB T. STEWART  
GRAMBLING STATE UNIVERSITY  
GRAMBLING, LOUISIANA**

**DRAWING LIST**

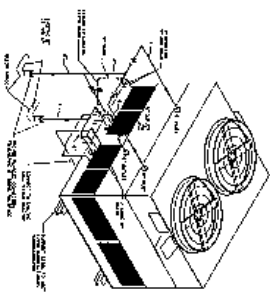
March 2010

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**HVAC**

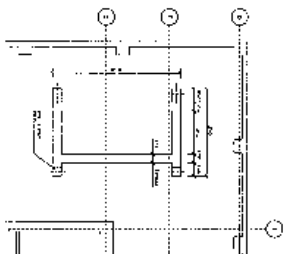
M-1 HVAC FLOOR PLAN, DETAILS, AND SCHEDULES





TYPICAL COOLING TOWER INSTALLATION

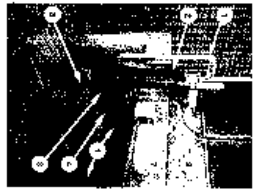
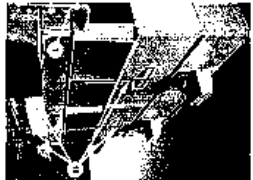
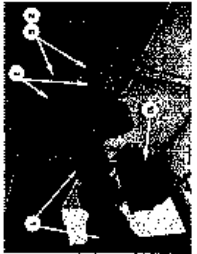
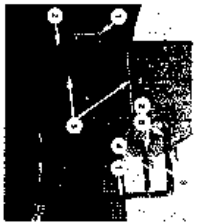
ITEM	QTY	UNIT	DESCRIPTION	PRICE	TOTAL
1	1	EA	COOLING TOWER	1200.00	1200.00
2	1	EA	FAN	100.00	100.00
3	1	EA	CONCRETE SUPPORT	150.00	150.00
4	1	EA	STEEL BRACKET	50.00	50.00
5	1	EA	WELDING	100.00	100.00
6	1	EA	PAINT	50.00	50.00
7	1	EA	LABOR	100.00	100.00
8	1	EA	PERMIT	100.00	100.00
9	1	EA	DEMOLITION	100.00	100.00
10	1	EA	FOUNDATION	100.00	100.00
11	1	EA	WATER PUMP	100.00	100.00
12	1	EA	WATER TANK	100.00	100.00
13	1	EA	WATER PIPING	100.00	100.00
14	1	EA	WATER VALVE	100.00	100.00
15	1	EA	WATER METER	100.00	100.00
16	1	EA	WATER FILTER	100.00	100.00
17	1	EA	WATER TREATMENT	100.00	100.00
18	1	EA	WATER DISTRIBUTION	100.00	100.00
19	1	EA	WATER COLLECTION	100.00	100.00
20	1	EA	WATER PUMP	100.00	100.00



EXISTING CONCRETE TOWER SUPPORT

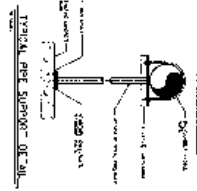
ITEM	QTY	UNIT	DESCRIPTION	PRICE	TOTAL
1	1	EA	CONCRETE TOWER	1200.00	1200.00
2	1	EA	FAN	100.00	100.00
3	1	EA	CONCRETE SUPPORT	150.00	150.00
4	1	EA	STEEL BRACKET	50.00	50.00
5	1	EA	WELDING	100.00	100.00
6	1	EA	PAINT	50.00	50.00
7	1	EA	LABOR	100.00	100.00
8	1	EA	PERMIT	100.00	100.00
9	1	EA	DEMOLITION	100.00	100.00
10	1	EA	FOUNDATION	100.00	100.00
11	1	EA	WATER PUMP	100.00	100.00
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14	1	EA	WATER VALVE	100.00	100.00
15	1	EA	WATER METER	100.00	100.00
16	1	EA	WATER FILTER	100.00	100.00
17	1	EA	WATER TREATMENT	100.00	100.00
18	1	EA	WATER DISTRIBUTION	100.00	100.00
19	1	EA	WATER COLLECTION	100.00	100.00
20	1	EA	WATER PUMP	100.00	100.00

EXISTING CONCRETE TOWER SUPPORT

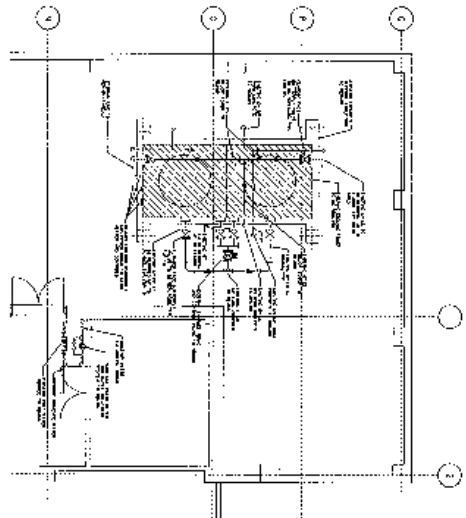


1. Remove existing concrete tower support structure.
2. Prepare existing concrete tower support structure.
3. Install new concrete tower support structure.
4. Install new cooling tower.
5. Install new fan.
6. Install new steel bracket.
7. Weld new steel bracket.
8. Paint new steel bracket.
9. Labor.
10. Permit.
11. Demolition.
12. Foundation.
13. Water pump.
14. Water tank.
15. Water piping.
16. Water valve.
17. Water meter.
18. Water filter.
19. Water treatment.
20. Water distribution.
21. Water collection.
22. Water pump.

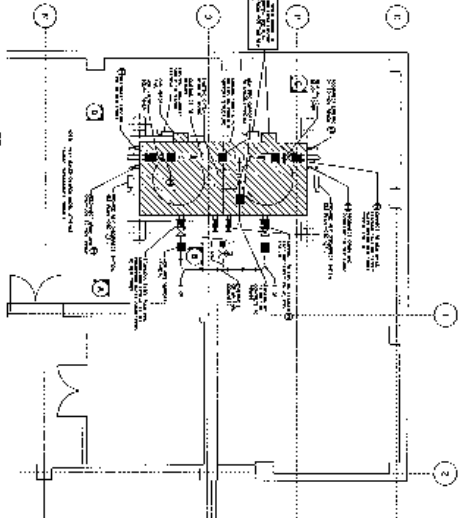
EXISTING COOLING TOWER



TYPICAL PIPE SUPPORT OF TAIL



DEMOLITION PLAN



NEW TOWER INSTALLATION PLAN

Design Professionals, Inc.  
10000 Highway 101  
New Orleans, Louisiana 70124  
Phone: (504) 835-1234  
Fax: (504) 835-1235

Cooling Tower Replacement For  
**JACOB T. STEWART BUILDING**  
Grambling State University  
Grambling, Louisiana

**M-1**